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McDERMOTT, WILL & EMERY
600 13th Street, N.W.
Washington, DC 20005-3096

EXAMINER	
LAM, HUNG H	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/091,406	TAKAHASHI ET AL.	
	Examiner	Art Unit	
	Hung H. Lam	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *2,4-6,8,10-12,14 and 16-24* is/are allowed.

6)☒ Claim(s) *1,3,7,9,13 and 15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: in claims 19-24, "adding said first and second regulated image signals" should be changed to "adding said first and second regulated sequential scan image signals".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Motono (US-6,798,448).

Claim 7 will be discussed first. With regarding **claim 7**, Motono discloses an imager for use in a video camera, which supports at least an interlace scan mode and a sequential scan mode (Col. 1, Ln. 43-50), the imager (Fig. 1; image section 1) comprising:

CCD means (Fig. 1; image section 1), for generating an interlace scan image signal in response to an interlace scan mode selection signal and generating a sequential scan image signal in response to a sequential mode selection signals (Col. 1, Ln. 43-50; Col. 5, Ln. 1-23; it is noticed that sequential scanning is commonly known in the art as progressive, or non-interlaced scanning), said sequential scan image signal having 2N lines composed of odd lines and even lines where N is the number of scan lines of an image to be obtained (it is inherent that the sequential scan image signals include plurality of odd and even lines);

synchronizing means for synchronizing each pair of odd and even lines of the sequential scan image signal generated by the CCD means to produce a synchronized odd and even lines of the sequential scan image signal (see Figs. 4-6 and 12-15; it is inherent that the camera must include a synchronizing means for synchronizing each pair of odd and even lines in order for the camera to operate as disclosed);

regulation means (Figs. 1, 10 and 11; I/F, processing, image mix 3) for doing ordinary image regulations for said synchronized odd and even lines of the sequential scan image signal produced by the synchronizing means to provide first regulated sequential scan image signal of odd lines and a second regulated sequential scan image signal of even lines (Col. 8, Ln. 54-62; I/F 3 provides a first/second regulated sequential/progressive scan image signal of odd/even lines for an operation of processing the still picture), and doing the ordinary image regulations for said

interlace scan image signal generated by the CCD means to provide a regulated interlace scan image signal (Col. 8, Ln. 63- Col. 9, Ln. 1-7);

generating means (Figs. 1 and 10; J-Peg/Motion, compression, expansion 7) responsive to sequential scan mode selection signal (Col. 8, Ln. 54-62; Col. 6, Ln. 15-30), for generating a new sequential scan image signal from said first and second regulated sequential scan image signals provided by the regulation means (Figs. 1 and 10; I/F 3; the sequential/ progressive scan signal read into memory 3A which is further transferred/ compressed and stored into PCMCIA memory card 10), which are composed of regulated odd and even line signals in the sequential scan mode (the regulation means IF 3 inherently outputs the regulated odd and even line signals in the progressive scan mode in order to store a JPEG compression still image into memory card 10);

first outputting means (Figs. 1 and 11; DV recording 4) for outputting the regulated interlace scan image signal provided by the regulation means in said interlace scan mode (Col. 5, Ln. 62- Col. 6, Ln. 1-15; Col. 9, Ln. 1-15); and

second outputting means (Figs. 1 and 10; PCMCIA I/O 8 and connector 9) for outputting said new sequential scan image signal generated by the generating means in said sequential scan mode (Col. 4, Ln. 16-23; Col. 6, Ln. 15-30).

With regarding **claim 1**, the claim is a method of the apparatus claim 7. Therefore, claim 1 is analyzed and rejected as discussed in claim 7.

5. Claims 3 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoneyama (US-6,587,149).

Claim 9 will be discussed first. With regarding **claim 9**, Yoneyama discloses an imager (Fig. 1; CCD 11) for use in a video camera, which supports at least a dynamic range-widening scan mode and a sequential scan mode (Col. 5, Ln. 34-40; it is noticed that sequential scanning is commonly known in the art as progressive, or non-interlaced scanning), the imager (CCD 11) comprising:

CCD means (Fig. 1; CCD 11) for generating a dynamic range-widening scan image signal of 2N lines in response to a WS mode selection signal (Col. 5, Ln. 56- Col. 6, Ln. 1-15; the Slong and Sshort signals of the progressive scan CCD in a dynamic range enlarging mode is inherently included a number of odd and even lines), and generating a sequential scan image signal in response to a sequential mode selection signals (Col. 5, Ln. 35-40), N being the number of scan lines of an image to be obtained (Col. 5, Ln. 54-56; Col. 7, Ln. 39-42; Yoneyama teaches a CCD comprising 240 output lines in one field period), every other line of said dynamic range-widening scan image signal being exposed longer than adjacent lines of said dynamic range-widening scan image signal (Col. 7, Ln. 9-45), said sequential scan image signal having 2N lines composed of odd lines and even lines (Col. 7, Ln. 39-42; it is inherent that the progressive scan mode have 2N lines of odd and even lines);

synchronizing means (Fig. 1; scan 15 and 16) for synchronizing each pair of odd lines and even lines of the sequential scan image signal generated by the CCD means (Col. 6, Ln. 42-55), and synchronizing each of odd lines of said dynamic range-widening scan image signal

generated by the CCD means (Fig. 1; CCD 11) with a corresponding even line of said dynamic range-widening scan image signal (Fig. 1; Slong and Sshort comprise odd and even lines) to provide as first synchronized dynamic range-widening scan image signal of odd lines and a second synchronized dynamic range-widening scan image signal of even lines (the outputs of scan 1 and 2 that are inputted to signal synthesizing means 18, are interpreted as the first/second synchronized dynamic range-widening scan image signal of odd/even lines);

generating means (Fig. 1; signal synthesizing means 18) for generating a dynamic range-widened image signal from said first and second synchronized dynamic range-widening scan image signals provided by the synchronizing means in said dynamic range-widening scan mode (Col. 6, Ln. 55-59; Col. 6, Ln. 66-Col. 7, Ln. 4);

regulation means (Fig. 1; signal adding means 17-1 and camera signal processing part 20) for doing ordinary image regulations for said odd and even lines of the sequential scan image signal synchronized by the synchronizing means to provide a first regulated sequential scan image signal of odd lines and a second regulated sequential scan image signal of even lines (Col. 6, Ln. 60-65; signal adding means 17-1 is interpreted as the regulation means for progressive/sequential scan mode) and doing the ordinary image regulations for said dynamic range-widened image sisal generated by the generating means to provide a regulated dynamic range-widened image signals (Col. 7, Ln. 65- Col. 8, Ln. 6; camera signal processing part 20 is interpreted as the regulation means for wide dynamic enlarging mode);

second generating means (Fig. 1; camera signal processing part 20 is also interpreted as the second generating means), responsive to sequential scan mode selection signal (Fig. 1; SW 19; Col. 6, Ln. 65- Col. 7, Ln. 4), for generating a new sequential scan image signal from said

first and second regulated sequential scan image signals provided by the regulation means (Fig. 1; see the regulated sequential/progressive signals from 17-1; Col. 6, Ln. 60-65; Col. 7, Ln. 53-57), which are composed of regulated odd and even line signals in the sequential scan mode (it is inherent that the progressive scanning signals from signal adding 17-1 compose odd and even signal lines);

first outputting means (Fig. 1; the output of camera signal processing part 20) for outputting the regulated dynamic range-widened image signal provided by the regulation means in said dynamic range-widening scan mode (Col. 6, Ln. 65 – Col. 7, Ln. 4; Col. 8, Ln. 53-58); and

second outputting means (Fig. 1; the output of camera signal processing part 20) for outputting said new sequential scan image signal generated by the second generating means in said sequential scan mode (Col. 6, Ln. 65 – Col. 7, Ln. 4; Col. 8, Ln. 53-58).

With regarding **claim 3, t**he claim is a method of the apparatus claim 9. Therefore, claim 3 is analyzed and rejected as discussed in claim 9.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Motono in view of Ackland (1996 IEEE International Solid State Circuits Conference 0-7808-3136-2).

With regarding **claim 13**, Motono teaches a camera system, for use in a video camera (Fig. 1; 100), which processes an image signal supplied from a CCD portion (Figs. 1 and 10; CCD 1) of the camera in any one of at least an interlace scan mode and a sequential scan mode, wherein the CCD portion is capable of generating at least an interlace scan image signal based on the interlace scan mode and a sequential scan image based on the sequential scan mode (Col. 1, Ln. 43-50; Col. 5, Ln. 1-23; it is noticed that sequential scanning is commonly known in the art as progressive, or non-interlaced scanning), the sequential scan image signal having 2N lines composed of odd lines and even lines (it is inherent that the sequential scan image signals include plurality of odd and even lines), where N is the number of scan lines of an image to be obtained, the camera system (Fig. 1; 100) comprising:

synchronizing means for synchronizing each pair of odd and even lines of the sequential scan image signal generated by the CCD portion to produce a synchronized odd and even lines of the sequential scan image signal (see Figs. 4-6 and 12-15; it is inherent that the camera must include a synchronizing means for synchronizing each pair of odd and even lines in order for the camera to operate as disclosed);

regulation means (Figs. 1, 10 and 11; I/F, processing, image mix 3) for doing ordinary image regulations for said synchronized odd and even lines of the sequential scan image signal synchronized by the synchronizing means to provide a first regulated sequential scan image

signal of odd lines and a second regulated sequential scan image signal of even lines (Col. 8, Ln. 54-62; I/F 3 provides a first/second regulated sequential/progressive scan image signal of odd/even lines for an operation of processing the still picture), and doing the ordinary image regulations for said interlace scan image signal generated by the CCD portion to provide a regulated interlace scan signal (Col. 8, Ln. 63- Col. 9, Ln. 1-7);

generating means (Figs. 1 and 10; J-Peg/Motion, compression, expansion 7), responsive to said sequential scan mode selection signal (Col. 8, Ln. 54-62; Col. 6, Ln. 15-30), for generating a new sequential scan image signal from said first and second regulated sequential scan image signals provided by the regulation means (Figs. 1 and 10; I/F 3; the sequential/ progressive scan signal read into memory 3A which is further transferred/ compressed and stored into PCMCIA memory card 10), which are composed of regulated odd and even line signals in the sequential scan mode (the regulation means IF 3 inherently outputs the regulated odd and even line signals in the progressive scan mode in order to store a JPEG compression still image into memory card 10);

means for outputting the regulated interlace scan image signal (Figs. 1 and 11; DV recording 4) provided by the regulation means (I/F 3) in said interlace scan mode (Col. 5, Ln. 62- Col. 6, Ln. 1-15; Col. 9, Ln. 1-15); and

means for outputting said new sequential scan image signal (Figs. 1 and 10; PCMCIA I/O 8 and connector 9) generated by the generating means (Figs. 1 and 10; J-Peg/Motion, compression, expansion 7) in said sequential scan mode (Col. 4, Ln. 16-23; Col. 6, Ln. 15-30).

However, Motono fails to explicitly disclose an integrated circuit for use in a video camera.

In the same field of endeavor, Ackland teaches a single-chip multimedia camera wherein CCD sensor, clock drive, A/D converter and signal processing circuit are all integrated on the same die and thereby reducing the size, cost, power dissipated and noise (Fig. 2, first page and page 23). In light of the teaching from Ackland, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Motono by having an integrated camera on a chip as taught by Ackland in order to provide an improved camera with size, cost, power and noise reduction.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoneyama in view of Ackland (1996 IEEE International Solid State Circuits Conference 0-7808-3136-2).

With regarding **claim 15**, Yoneyama discloses a camera system, for use in a video camera (Fig. 1; 100), which processes an image signal supplied from a CCD portion (Fig. 1; CCD 11) of the camera in any one of at least a dynamic range-widening scan mode and a sequential scan mode (Col. 5, Ln. 34-40; it is noticed that sequential scanning is commonly known in the art as progressive, or non-interlaced scanning), the imager, wherein the CCD portion is capable of generating at least a dynamic range-widening scan image signal of 2N lines based on the dynamic range-widening scan mode and a sequential scan image signal of 2N lines based on the sequential scan mode (Col. 5, Ln. 35-40; Col. 5, Ln. 56- Col. 6, Ln. 1-15; the Slong and Sshort signals of the progressive scan CCD in a dynamic range enlarging mode is inherently included a number of odd and even lines), N being the number of scan lines of an image to be obtained Col. 5, Ln. 54-56; Col. 7, Ln. 39-42; Yoneyama teaches a CCD comprising 240 output

lines in one field period), and every other line of said dynamic range-widening scan image signal being exposed longer than adjacent lines of said dynamic range-widening scan image signal (Col. 7, Ln. 9-45), the camera system (Fig. 1; 100) comprising:

synchronizing means (Fig. 1; scan 15 and 16) for synchronizing each pair of odd and even lines of the sequential scan image signal generated by the CCD portion (Col. 6, Ln. 42-55), and synchronizing each of odd lines of said dynamic range-widening scan image signal generated by the CCD portion (Fig. 1; CCD 11) with a corresponding even line of said dynamic range-widening scan image signal (Fig. 1; Slong and Sshort comprise odd and even lines) to provide a first synchronized dynamic range-widening scan image signal of odd lines and a second synchronized dynamic range-widening scan image signal of even lines (the outputs of scan 1 and 2 that are inputted to signal synthesizing means 18, are interpreted as the first/second synchronized dynamic range-widening scan image signal of odd/even lines);

first generating means (Fig. 1; signal synthesizing means 18) for generating a dynamic range-widened image signal from said first and second synchronized dynamic range-widening scan image signals provided by the synchronizing means in said dynamic range-widening scan mode (Col. 6, Ln. 55-59; Col. 6, Ln. 66-Col. 7, Ln. 4);

regulation means (Fig. 1; signal adding means 17-1 and camera signal processing part 20) for doing ordinary image regulations for said synchronized odd and even lines of the sequential scan image signal synchronized by the synchronizing means to provide a first regulated sequential scan image signal of odd lines and a second regulated sequential scan image signal of even lines (Col. 6, Ln. 60-65; signal adding means 17-1 is interpreted as the regulation means for progressive/sequential scan mode), and doing the ordinary image regulations for said dynamic

range-widened image signal to provide a regulated dynamic range-widened image signal (Col. 7, Ln. 65- Col. 8, Ln. 6; camera signal processing part 20 is interpreted as the regulation means for wide dynamic enlarging mode);

second generating means (Fig. 1; camera signal processing part 20 is also interpreted as the second generating means), responsive to said sequential scan mode selection signal (Fig. 1; SW 19; Col. 6, Ln. 65- Col. 7, Ln. 4), for generating a new sequential scan image signal from said first and second regulated sequential scan image signals provided by the regulation means (Fig. 1; see the regulated sequential/progressive signals from 17-1; Col. 6, Ln. 60-65; Col. 7, Ln. 53-57), which are composed of regulated odd and even line signals in the sequential scan mode (it is inherent that the progressive scanning signals from signal adding 17-1 compose odd and even signal lines);

first outputting means (Fig. 1; the output of camera signal processing part 20) for outputting the regulated dynamic range-widened image signal provided by the regulation means in said dynamic range-widening scan mode (Col. 6, Ln. 65 – Col. 7, Ln. 4; Col. 8, Ln. 53-58); and

second outputting means (Fig. 1; the output of camera signal processing part 20) for outputting said new sequential scan image signal generated by the second generating means in said sequential scan mode (Col. 6, Ln. 65 – Col. 7, Ln. 4; Col. 8, Ln. 53-58).

However, Yoneyama fails to explicitly disclose an integrated circuit for use in a video camera.

In the same field of endeavor, Ackland teaches a single-chip multimedia camera wherein CCD sensor, clock drive, A/D converter and signal processing circuit are all integrated on the

same die and thereby reducing the size, cost, power dissipated and noise (Fig. 2, first page and page 23). In light of the teaching from Ackland, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Yoneyama by having an integrated camera on a chip as taught by Ackland in order to provide an improved camera with size, cost, power and noise reduction.

Allowable Subject Matter

8. Claims 2, 4-6, 8, 10-12, 14, 16-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding **claim 2** the following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest the method of claim 1 further in combination with:

causing said CCD portion to generate a dynamic range-widening scan image signal of 2N lines in response to a WS mode selection signal, every other line of the dynamic range-widening scan image signal being exposed longer than adjacent lines of said dynamic range-widening scan image signal;

synchronizing each of odd lines of said dynamic range-widening scan image signal with a corresponding even line of said dynamic range-widening scan image signal to provide a second synchronized dynamic range-widening scan image signal of even lines;

generating a dynamic range-widened image signal from said first and second synchronized dynamic range-widening scan image signals;

doing the ordinary image regulations for said dynamic range-widened image signal to provide a regulated dynamic range-widened image signal; and

outputting said regulated dynamic range-widened image signal in said dynamic range-widening scan mode.

Regarding **claim 4** the following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest the method of claim 1 further in combination with:

in said sequential scan mode, calculating a first vertical contour correction value for each pair of current synchronized odd and even lines of said sequential scan image signal by using 6 lines of data including said pair of current synchronized odd and even lines in the center of the 6 lines;

performing a vertical contour correction by using said first vertical contour correction values, and

said step of doing the ordinary image regulations for said interlace scan image signal includes the steps of:

in said interlace scan modes, calculating a second vertical contour correction value for each current line of said interlace scan image signal by using 5 lines of data including said current line in the center of the 5 lines; and

performing a vertical contour correction by using said second vertical contour correction value.

Regarding **claim 5** the following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest the method of claim 2 further in combination with:

in said dynamic range-widening scan mode, calculating a third vertical contour correction value for each current line of said dynamic range-widened image signal by using 5 lines of data including said current line in the center of the 5 lines; and

performing a vertical contour correction by using said third vertical contour correction value.

Regarding **claim 6** the following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest the method of claim 3 further in combination with:

in said sequential scan mode, calculating a first vertical contour correction value for each pair of current synchronized odd and even lines of said sequential scan image signal by using 6 lines of data including said pair of current synchronized odd and even lines in the center of the 6 lines;

performing a vertical contour correction by using said first vertical contour correction values, and

said step of doing the ordinary image regulations for said dynamic range-widened image signal includes the steps of:

in said dynamic range-widening scan mode, calculating a second vertical contour correction value for each current line of said dynamic range-widened image signal by using five lines of data including said current line in the center of the five lines; and

performing a vertical contour correction by using said second vertical contour correction value.

Regarding **claim 8** the following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest an imager of claim 7 further in combination with:

second generating means for generating a dynamic range-widening: scan image signal of 2N lines in response to a WS mode selection signal, every other line of the dynamic range-widening scan image signal;

second synthesizing means for synchronizing each of odd lines of said dynamic range-widening scan image signal generated by the second generating means with a corresponding even line of said dynamic range-widening scan image signal to provide a first synchronized dynamic range-widening scan image signal of odd lines and a second synchronized dynamic range-widening scan image signal of even lines;

third generating means for generating a dynamic range-widened image signal from said first and second synchronized dynamic range-widening scan image signals provided by the second synthesizing means;

second regulation means for doing the ordinary image regulations for said dynamic range-widened image signal generated by the third generating means (40) to provide a regulated dynamic range-widened image signal; and

third outputting means for outputting said regulated dynamic range-widened image signal provided by the second regulation means in said dynamic range-widening scan mode.

Regarding **claim 10** the following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest an imager of claim 7 further in combination with:

means for, in said sequential scan mode, calculating a first vertical contour correction value for each pair of current synchronized odd and even lines of said sequential scan image signal by using 6 lines of data including said pair of current synchronized odd and even lines in the center of the 6 lines;

means for performing a vertical contour correction by using said first vertical contour correction value;

means for, in said interlace scan mode, calculating a second vertical contour correction value for each current line of said interlace scan image signal by using five lines of data including said current line in the center of the five lines; and

means for performing a vertical contour correction by using said second vertical contour correction value.

Regarding **claim 11** the following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest an imager of claim 8 further in combination with:

means for, in said dynamic range-widening scan mode, calculating a third vertical contour correction value for each current line of said dynamic range-widened image signal by using 5 lines of data including said current line in the center of the 5 lines; and

means for performing a vertical contour correction by using said third vertical contour correction value.

Regarding **claim 12** the following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest an imager of claim 9 further in combination with:

means for, in said sequential scan mode, calculating a first vertical contour correction

value for each pair of current synchronized odd and even lines of said sequential scan image signal by using 6 lines of data including said current, pair of current synchronized odd and even lines in the center of the 6 lines;

means for performing a vertical contour correction by using said first vertical contour correction value;

means for, in said dynamic range-widening scan modes calculating a second vertical contour correction value for each current line of said dynamic range-widened image signal by using 5 lines of data including said current line in the center of the 5 lines; and

means for performing a vertical contour correction by using said second vertical contour correction value.

Regarding **claim 14** the following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest an integrated circuit of claim 13 further in combination with:

means for synchronizing each of odd lines of said dynamic range-widening scan image signal with a corresponding even line of said dynamic range-widening scan image signal to provide a first synchronized dynamic range-widening scan image signal of odd lines and a second synchronized dynamic range-widening scan image signal of even lines;

means for generating a dynamic range-widened image signal from said first and second synchronized dynamic range-widening scan image signals;

means for doing the ordinary image regulations for said dynamic range-widened image

signal to provide a regulated dynamic range-widened image signal; and

means for outputting said regulated dynamic range-widened image signal in said dynamic range-widening scan mode.

Regarding **claim 16** the following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest an integrated circuit of claim 13 further in combination with:

means for, in said sequential scan mode, calculating a first vertical contour correction value for each pair of current synchronized odd and even lines of said sequential scan image signal by using 6 lines of data including said pair of current synchronized odd and even lines in the center of the 6 lines;

means for performing a vertical contour correction by using said first vertical contour correction value;

a means for, in said interlace scan mode, calculating a second vertical contour correction value for each current line of said interlace scan image signal by using 5 lines of data including said current line in the center of the 5 line; and

means for performing a vertical contour correction by using said second vertical contour correction value.

Regarding **claim 17** the following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest an integrated circuit of claim 14 further in combination with:

means for, in said dynamic range-widening scan mode, calculating a third vertical contour correction value for each current line of said dynamic range-widened image signal by using 5 lines of data including said current line in the center of the 5 lines; and

means for performing a vertical contour correction by using said third vertical contour correction value.

Regarding **claim 18** the following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest an integrated circuit of claim 15 further in combination with:

means for, in said sequential scan mode, calculating a first vertical contour correction value for each pair of current synchronized odd and even lines of said sequential scan image signal by using 6 lines of data including said pair of current synchronized odd and even lines in the center of the 6 lines;

means for performing a vertical contour correction by using said first vertical contour correction value;

means for in said dynamic range-widening scan mode, calculating a second vertical contour correction value for each current line of said dynamic range-widened image signal by using 5 lines of data including said current line in the center of the 5 lines; and

means for performing a vertical contour correction by using said second vertical contour correction value.

Regarding **claims 19 and 20** the following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest the method of claim 1 and 3 further in combination with:

in response to said sequential scan mode selection signal, adding said first and second regulated sequential scan image signals together to generate a new interlace scan image signal; and

outputting said new interlace scan image signal in said sequential scan mode.

Regarding **claims 21 and 22** the following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest the imager of claim 7 and 9 further in combination with:

adding means for, responsive to said sequential scan mode selection signal, adding said first and second regulated sequential scan image signals together to generate a new interlace scan image signal; and

means for outputting said new interlace scan image signal generated by the adding means in said sequential scan mode.

Regarding **claims 23 and 24** the following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest the integrated circuit of claim 13 and 15 further in combination with:

adding means for, responsive to said sequential scan mode selection signal, adding said first and second regulated sequential scan image signals together to generate a new interlace scan image signal; and

means for outputting said new interlace scan image signal generated by the adding means in said sequential scan mode.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Okada (US-2004/0,263,645) discloses a sequential scan imaging device wherein the sequential scanning is also known as progressive/ non-interlaced scanning.

b) Hieda (US-2002-0,033,887) discloses an image sensing apparatus using a non-interlace or progressive scanning type image sensing device.

c) Kannegundla (US-5,396,290) discloses an apparatus and method for controlling high resolution pictures by selecting sequential or interlacing mode.

d) Sasaki (US-2004-0,105,016) discloses an image processing circuit wherein the interlace mode including interpolation, and contour correction processing circuits.

e) Kobayashi (US-6,356,306) discloses a digital camera capable of converting a progressive scan signal into a interlace scan signal.

d) Elabd (US-5,272,535) discloses an image sensor with exposure control selectable interlaced, pseudo interlaced or non-interlaced readout.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung H. Lam whose telephone number is 571-272-7367. The examiner can normally be reached on Monday - Friday 8AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on 571-272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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HL

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NGOC-YEN VU
PRIMARY EXAMINER